

POWERED BY **Dialog****SEMICONDUCTOR DEVICE (06-204168****Publication Number:** JP 6204168 A) , July 22, 1994**Inventors:**

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**Applicants**

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**Application Number:** 04-358558 (JP 92358558) , December 28, 1992**International Class (IPC Edition 5):**

- H01L-021/28
- G02F-001/136
- H01L-021/90
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**JAPIO Class:**

- 42.2 (ELECTRONICS--- Solid State Components)
- 29.2 (PRECISION INSTRUMENTS--- Optical Equipment)

**JAPIO Keywords:**

- R011 (LIQUID CRYSTALS)
- R097 (ELECTRONIC MATERIALS--- Metal Oxide Semiconductors, MOS)

**Abstract:**

**PURPOSE:** To eliminate an increase of contact value in high temperature heat treatment, and obtain a semiconductor device of high speed and low consumption power which exhibits excellent contact characteristics, by forming a layer composed of at least one kind selected out of at least Ta and Ta compound, between an ITO thin film and an Si region.

**CONSTITUTION:** A single crystal silicon layer 22 is formed in an island type on a semiconductor substrate 20, via an insulating film 21. Then a gate insulating film 23 is formed, and an interlayer insulating film 26 is formed. A contact window is formed in a source.drain region 25 by using dry etching. A Ta layer 27 is formed by using a CVD method or a sputtering method. After that, an ITO is formed by patterning the Ta layer 27. As to the film formation condition of ITO, the substrate temperature is kept at 200 deg.C, and sputtering is performed with power of 300W in an atmosphere (1Pa) of C, Ar and O(sub 2) (1%). Thereby a semiconductor device having excellent and stable contact characteristics can be obtained.

**JAPIO**

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